Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

BASF Corporation
TDI Plant
Geismar, Ascension Parish, Louisiana
Agency Interest Number: 2049
Activity Number: PER20040003
Draft Permit 2643-V1

I. APPLICANT:

Company:
BASF Corporation
P.O. Box 457, Geismar, LA 70734-0457

Facility:
TDI Plant
8404 River Road, Geismar, Ascension Parish, Louisiana
Approximate UTM coordinates are 693.042 kilometers East and 3342.281 kilometers North, Zone 15

II. FACILITY AND CURRENT PERMIT STATUS:

BASF Corporation, Geismar Facility, is an existing integrated chemical manufacturing facility that has been in operation over 25 years. Chemicals produced at the site include: acetylene, amine compounds, aniline, ethylene oxide, ethylene glycol, glyoxal, 1,4-butanediol, n-methyl pyrrolidone, toluene diisocyanate, tetrahydrofuran, polytetrahydrofuran, vinylpyrrolidone, polyvinylpyrrolidone, polyols, butyrolactone, surfactants, and methylene bis phenylisocyanate.

The TDI Plant located in the complex currently operates under Permit No. 2643-V0, issued November 4, 1999. This is the Part 70 operating permit renewal for the TDI Plant.

The TDI plant manufactures toluenediisocyanate (TDI), which is formed from the reaction of phosgene and toluenediamine (TDA). The TDI Plant consists of seven primary process areas: TDA production, phosgene synthesis, phosgenation (crude TDI) production), TDI distillation, tank farm operations (drum filling and storage), offgas treatment and TDI Flare, and TDI Utilities. The plant produces an estimated 440 MM pounds of TDI, 327 MM pounds of TDA as an intermediate, and 387 MM pounds of HCl, annually.

BASF Corporation
TDI Plant
Geismar, Ascension Parish, Louisiana
Agency Interest Number: 2049
Activity Number: PER20040003
Draft Permit 2643-V1

As part of this permit renewal request, BASF is reconciling emissions in the TDI Plant to as-built conditions. Emission changes are due solely to this reconciliation.

Initial/Renewal Title V Part 70 permits previously issued:

Permit #	Units or Sources	Date Issued
2526-V2	ACETYLENE	6/19/2006
2028-V3	SPECIALTY AMINES (INCLUDES S-MOIPA)	12/23/2005
2558-V1	ANILINE I & II	10/18/2006
2353-V0	DIOLS/INTERMEDIATES	2/20/2006
2459-V3	EO/EG	3/30/2006
2094-V1	GLYOXAL	7/13/2006
2334-V0	MDI I	6/5/2006
2559-V3	MDI II	4/24/2007
2039-V0	NVP/PVP	4/11/2002
2427-V1	POLYOLS/CCU	7/7/2006
2582-V2	SURFACTANTS	6/29/2005
2643-V0	TDI	11/4/1999
2265-V4	UTILITIES/WWTP	8/29/2001
2564-V2	UTILITIES BOILERS 3 & 6	5/1/2007

III. PROPOSED PERMIT / PROJECT INFORMATION:

Proposed Permit

A permit application and Emission Inventory (EIQ) questionnaire was submitted by BASF Corp on March 31, 2004, requesting a Part 70 operating permit renewal and providing a reconciliation of emissions to as-built conditions, 2643-V1, for the TDI Plant. Additional information dated March 20, 2006, April 27, 2007, May 2, 2007, May 3, 2007, May 4, 2007, May 11, 2007, May 18, 2007, July 12, 2007, July 30, 2007, August 9, 2007, August 29, 2007, and September 20, 2007 was also received.

A notice requesting public comment on the proposed permit was published in *The Advocate*, Baton Rouge, Louisiana, on <day>, <date>; and *Gonzales Weekly*, Gonzales, Louisiana, on <day>, <date>. The proposed permit was also sent to US EPA Region VI.

BASF Corporation
TDI Plant
Geismar, Ascension Parish, Louisiana
Agency Interest Number: 2049
Activity Number: PER20040003
Draft Permit 2643-V1

The facility currently operates under Permit No. 2643-V0, issued November 4, 1999.

Project Description

Proposed changes to the TDI Plant include the following:

- Reconciling emissions in the TDI Plant to as-built conditions. Emission changes are due solely to this reconciliation.

Permitted Air Emissions

The estimated emissions in tons per year for this TDI Plant permit renewal are as follows:

Pollutant	Before	After	Change
PM_{10}	13.16	13.18	+0.02
SO_2	0.02	0.03	+0.01
NO_X	5.54	6.56	+1.02
CO	83.19	115.97	+32.78
VOC *	13.76	10.30	-3.46

*VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):

Pollutant	Before	After	Change
2,4-Dinitrotoluene	0.85	0.06	-0.79
2,6-Dinitrotoluene	0.21	0.02	-0.19
Benzene	0	0.001	+0.001
Benzyl chloride	0.01	0	-0.01
n-Butanol	0.02	0.05	+0.03
Carbon Tetrachloride	0.001	0.31	+0.309
Chloroform	0.01	0.008	-0.002
Chlorobenzene	0	0.004	+0.004
Formaldehyde	0	0.002	+0.002
n-Hexane	0	0.08	+0.08

BASF Corporation
TDI Plant
Geismar, Ascension Parish, Louisiana
Agency Interest Number: 2049
Activity Number: PER20040003
Draft Permit 2643-V1

*VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):

Pollutant	Before	After	Change
Methanol	0.30	0.68	+0.38
Methylenediphenyl Diisocyanate	0.001	0.002	+0.001
Phosgene	0.01	0.01	0
o-Toluidine	0.16	0.31	+0.15
Toluene	1.96	2.46	+0.50
Diaminotoluene (Toluenediamine)	1.47	1.13	-0.34
Toluenediisocyanate	0.05	0.02	-0.03
Total	5.052	5.147	0.095

Non-VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):

Pollutant	Before	After	Change
Ammonia	3.98	4.40	+0.42
Chlorine	0.01	0.14	+0.13
Hydrochloric Acid	0.51	3.92	+3.41
Total	4.50	8.46	3.96

*Other VOC (TPY): 5.15

Prevention of Significant Deterioration Applicability

This permit was reviewed for compliance with 40 CFR 70, the Louisiana Air Quality Regulations, New Source Performance Standards (NSPS), and National Emission Standards for Hazardous Air Pollutants (NESHAP).

There is no physical change in the method of operation, therefore the modifications/revisions proposed in this application do not trigger PSD review. Prevention of Significant Deterioration (PSD) does not apply.

MACT requirements

The BASF Geismar Site is a major source of toxic air pollutants (TAPs). Facility-wide emissions of 1,3-butadiene, benzene, formaldehyde, and n-hexane are emitted in quantities above the Minimum Emission Rate (MER) and are controlled by Maximum Achievable Control Technology (MACT) in accordance with Compliance Plan No. 92067, approved November 1, 1994.

The flares act as a control device for several vessels and tanks. The flares are operated in accordance with 40 CFR 60 Subpart A and 40 CFR 63 Subpart A to ensure proper destruction of HAPs and TAPs.

Air Modeling Analysis

Not Applicable.

General Condition XVII Activities

Not Applicable.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to Section IX of the proposed Part 70 permit.

IV. Permit Shields

Not Applicable.

V. Periodic Monitoring

The Monitoring, Reporting, and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are provided in the Facility Specific Requirements Section of the proposed permit.

VI. Applicability and Exemptions of Selected Subject Items

A complete listing of applicable and exempted state and federal air quality requirements for each subject item is included in the proposed Part 70 permit, Table 2.

BASF Corporation
TDI Plant
Geismar, Ascension Parish, Louisiana
Agency Interest Number: 2049
Activity Number: PER20040003
Draft Permit 2643-V1

VII. Streamlined Requirements

It is required that the TDI Plant comply with a streamlined equipment leak monitoring program. Compliance with the streamlined program shall serve to comply with each of the fugitive emission monitoring programs being streamlined.

For the TDI Plant, fugitive emissions are subject to the requirements of 40 CFR 63 Subpart H, 40 CFR 61 Subpart V, 40 CFR 60 Subpart VV, LAC 33:III.2122, and RCRA Subpart BB. Among these regulations, 40 CFR 63 Subpart H is the overall most stringent program. Therefore, fugitive emissions shall be monitored as required by this program (40 CFR 63 Subpart H).

Unit or Plant Site	Program Being Streamlined	Stream Applicability	Overall Most Stringent Program
TDI Plant/BASF	40 CFR 63 Subpart H – HON	≥ 5% OHAP	40 CFR 63 Subpart H – HON
	40 CFR 60 Subparts VV – NSPS for Equipment Leaks of VOC in SOCMI or Refineries	≥ 10% VOC	
	LAC 33:III.2122 – Fugitive Emission Control for Ozone Nonattainment Areas and Specified Parish	≥ 10% VOC	
	RCRA Subpart BB	≥ 10% VOC	

VIII. Glossary

Maximum Achievable Control Technology (MACT) - The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

Nitrogen Oxides (NO_x) - Compounds whose molecules consists of nitrogen and oxygen.

Part 70 Operating Permit- Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: ≥ 10 tons per year of any toxic air pollutant; ≥ 25 tons of total toxic air pollutants; and ≥ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM_{10}- Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) - The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO_2) – An oxide of sulphur.

Title V Permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) - Any organic compound which participates in atmospheric photochemical reactions; that is, any organic compound other than those which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.